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APPENDIX

1. A structural component of fiber-reinforced thermoplastic material comprising:

a shape-forming long-fiber-reinforced thermoplastic matrix and separate, single load-bearing plastified and consolidated continuous fiber strands with a thermoplastic matrix in a defined position within the structural component, the positions of the shape-forming long-fiber-reinforced thermoplastic matrix and the separate, single load-bearing plastified and consolidated continuous fiber strands with a thermoplastic matrix defining interfaces therebetween;

said continuous fiber strands being interconnected and having at least one load-transmitting flat internal connecting area between two continuous fiber strands;

wherein the single continuous fiber strands form a load-bearing supporting structure which is integrated in and thermoplastically bonded to the long-fiber-reinforced thermoplastic matrix at the interfaces therebetween.

2. Structural component in accordance with claim 1, characterized in that the interfaces (6) at least partially are designed as connecting layers (6a), which form a transition zone between long-fibre matrix (2) and continuous fibre strands (3).

3. Structural component in accordance with claim 1 or 2, characterized in that the interfaces (6) are designed as structured interfaces having uneven shapings (6b).

4. Structural component in accordance with one of the preceding claims, characterized in that the continuous fibre strands (CF) of the supporting structure form at least one closed mesh (10).

5. Structural component in accordance with one of the preceding claims, characterized in that the continuous fibre strands run in different directions and are thermoplastically bonded together at internal load-transmitting connecting areas (7) in the manner of a framework.

6. Structural component in accordance with one of the preceding claims, characterized in that the matrix material of the long-fibre reinforcement (2) and of the continuous fibre strands (3) in preference is identical, at least, however, compatible to such an extent, that the two materials are mixable together at the interfaces (6) through diffusion.

7. Structural component in accordance with one of the preceding claims, characterized in that the matrices of the long-fibre-reinforcement (2) and of the continuous fibre strands (3) consist of polypropylene (PP), polyamide (PA), polyethylenetherephtalate (PET), polybutylene-therephtalate (PBT), thermoplastic polyurethanes (PUR), polycarbonate (PC), polyacrylics, polyimide (PI), polyphenylsulphide (PPS) or polyetheretherketone (PEEK) and that the reinforcing fibres (13) of the continuous fibre strands in preference consist of glass, carbon or aramide and the long-fibre reinforcement (12) preferably consists of glass.

8. Structural component in accordance with claim 1, characterized in that the reinforcement (12) of the long-fibre matrix has a fibre content of 15 - 25 % by volume and that the continuous fibre strands (13) have a fibre content of at least 40 %, in preference 45 - 60 % by volume.

9. Structural component in accordance with claim 1, characterized in that the continuous fibre strands are twisted (15).

10. Structural component in accordance with claim 1, characterized in that the continuous fibre strands are needle-bonded (18), wrapped (16) or enveloped by a braided (17) tube.

11. Structural component in accordance with claim 1, characterized in that the long-fibre reinforcement (12) has a great proportion of fibres with a length of at least 5 mm, whereby the fibre length preferably to a great extent is within a range of 10 - 30 mm.

12. Structural component in accordance with claim 1, characterized in that load-bearing inserts (21) (e.g., seat-belt anchoring points) are integrated, which are directly connected with the continuous fibre strands (3), resp., are surrounded by them.

13. Structural component in accordance with claim 1, characterized in that further inlays (22) are integrated, e.g., high-strength continuous fibre-reinforced tubular profile parts (23) and / or local continuous fibre fabric inlays (24), which are connected with the continuous fibre strands and fused together with the long-fibre matrix.

14. Structural component in accordance with claim 1, characterized in that the continuous fibre strands form „three-dimensional" profile cross sections (25, 26, 27).

15. Structural component in accordance with claim 1, characterized in that external connecting areas (8) of the continuous fibre strands are foreseen.

16. Structural component in accordance with claim 1, characterized in that the layer thickness (d3) of the continuous fibre strands (3) is at least as great as the layer thickness (d2) of the long-fibre matrix (2) located above it.

17. Structural component in accordance with claim 1, characterized in that the load-transmitting connecting areas are designed with a large surface area (F7).

18. Structural component in accordance with claim 1, characterized in that the connecting areas (7) have a thin long-fibre intermediate layer (9).

19. Structural body (90) consisting of at least two structural components (1) in accordance with claim 1, which structural components are in preference connected to one another at external connecting areas (8) of the continuous fibre strands.

20. Structural body with at least two structural components (1) in accordance with claim 1, which are designed as half-shells and are connected to one another and, e.g., in the form of a U-profile (92) together with a cover (93) form a hollow profile girder (91).